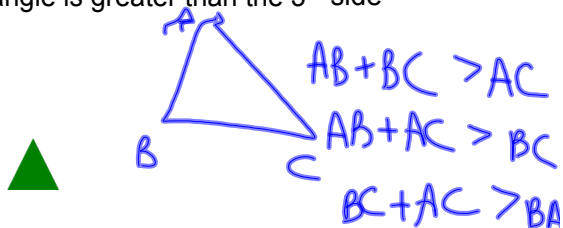


4.7 Triangle Inequalities

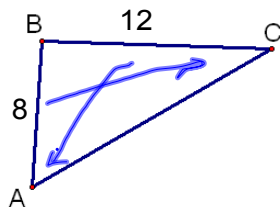
Theorem 4.12—Triangle Inequality Theorem—
the sum of the lengths of 2 sides of a
triangle is greater than the 3rd side



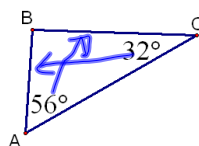
Q Do the following side
lengths form a \triangle ?

2, 5, 6 $2+5 > 6$ ✓ yes
11, 9, 10 $9+10 > 11$ ✓ yes
3, 2, 5 $3+2 > 5$ ✗ No

Theorem 4.10—If $BC > BA$, then
 $m\angle A > m\angle C$



Theorem 4.11—If $m\angle A > m\angle C$,
then $BC > BA$



Worksheet Examples

4. ^{4.7A} smallest $\angle A$
largest $\angle B$

5. sm $\angle R$
lg $\angle P$

6. sm $\angle K$ lg $\angle J$

7. sm FE
lg DF

8. sm KL
lg JL

9. sm WX lg WY

10. 2, 4, 6 ^{2+4 \neq 6} No

11. 4, 5, 7 ^{4+5 = 7} yes

12. No

13. ^{24 > 15} yes

14. ^{10 \neq 10} No

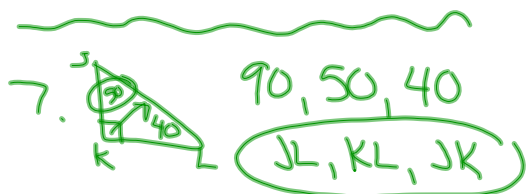
15. yes


4. ^{4.3 > 3 > 2}
 $\angle S, \angle Q, \angle R$

5. ^{8.6 > 8 > 4}
 $\angle E, \angle D, \angle F$

6.

6. $7, 6.5, 4$
 $\angle Q, \angle N, \angle M$



8.  $134, 23, 21$
 $\angle H, \angle G, \angle F$

9. WY, XY, XW

HW

p. 214-216

2, 3, 6-9, 12-20, 26-28

Attachments

4_7_triangle.gsp